

Review of Carbohydrates and Lipids

1. A triglyceride is a neutral fat composed of 1 molecule of _____ and 3 _____.
2. A _____ is a single sugar unit. An example is _____.
3. A fatty acid molecule consists of a long _____ chain made of _____ and _____ atoms and a _____ group at the other end.
4. A _____ is a double sugar unit. An example is _____.
5. Draw the structural formula of this fatty acid: $\text{CH}_3(\text{CH}_2)_5\text{COOH}$
6. _____ are long chains of repeating sugar units.
7. A triglyceride has 3 _____ bonds that are formed during _____ synthesis.
8. Name 3 plant polysaccharides: _____, _____, _____.
9. Saturated fatty acids have _____ carbon to carbon bonds, _____ melting points and are _____ at room temperature. They are primarily from _____ sources.
10. What characterizes dehydration synthesis?
11. Unsaturated fatty acids have _____ carbon to carbon bonds, _____ melting points and are _____ at room temperature.
12. _____ is the usual suffix for a carbohydrate molecule.
13. Draw the structural formula of glycerol.
14. The bond formed between 2 _____ to form a disaccharide is called a _____ bond.
15. Are neutral fats charged or uncharged molecules?
16. An example of a disaccharide is _____.
17. Is a water molecule charged or uncharged?
18. _____ is the monosaccharide that functions as the building block for most polysaccharides.
19. Do neutral fats dissolve in water? Explain.
20. Simple sugars have a C:H:O ratio of ____:____:____.
21. _____ are a special group of lipids that have one phosphate containing group ($-\text{PO}_4$) instead of a fatty acid. They are found in cell _____.
22. _____ is animal 'starch'.
23. Are the molecules in #21 charged or uncharged? Are they soluble in water? Explain.

24. What strengthens the structure of cellulose?
25. Explain the difference between hydrophilic and hydrophobic. Give an example of each (a molecule type). What molecule has both characteristics?

26. Make a cartoon of a mono, di, and polysaccharide.

27. _____ are another group of lipids that have 4 or 5 rings joined together. Four examples are, _____, _____, _____, and _____.
28. _____ are a group of lipids that are insoluble in water and are long fatty acid chains joined to alcohol chain or carbon rings.
29. Explain the stability difference between a saturated and an unsaturated fatty acid.